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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,525	01/23/2002	Hideki Sato	P9219.0000/P000	3239

24998 7590 10/16/2003

DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP
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WASHINGTON, DC 20037-1526

EXAMINER

PERT, EVAN T

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 10/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/052,525	SATO ET AL.	
	Examiner	Art Unit	
	Evan Pert	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-5 is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>0502</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Species II is acknowledged. However, the restriction requirement of paper no. 7 is withdrawn. Claims 1-5 are pending for consideration.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Lenssen et al. (US 6,465,053).
4. Claim 1 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Adelerhof (US 2002/0006017 A1).
5. Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Ku et al. (IEEE article entitled "Precision X-Y Robotic Object Handling Using a Dual GMR Bridge Sensor").

Explanation for items 3, 4 and 5 Above

The preamble of claim 1 recites the art-accepted definition of a "spin-valve GMR resistor element" (see Section B of Black & Fayfield, for example).

The body of claim 1 recites a plurality of spin-valve GMR resistor elements on the same chip, each element having a pinned layer magnetization direction, wherein the magnetization direction of two different pinned layers on the same chip "cross each other" (i.e. are *not* parallel or anti-parallel).

All three references relied on for rejection of claim 1 in items 3, 4 and 5 above teach a plurality of GMR resistor elements integrated on the same chip, wherein magnetization directions of different GMR resistor elements "cross each other" (i.e. are other than parallel or anti-parallel).

Allowable Subject Matter

6. Claims 2-5 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose applicant's claimed methodology useful for forming a plurality of pinned layers on the same chip wherein magnetization directions of at least two pinned layers "cross each other" (i.e. are not parallel or anti-parallel).

In one embodiment, applicant's methodology can be particularly characterized forming magnetic-field-applying magnetic layers; magnetizing the magnetic-field-applying layers; and pinning the magnetization direction of a magnetic layer with a magnetic field produced by a residual magnetization of the magnetic-field-applying magnetic layers [e.g. claims 2-4].

In another embodiment, the methodology is characterized by using an array of permanent magnets arranged at lattice points of a square lattice with polarity alternating among points of the lattice and using a magnetic field formed between magnetic poles of the permanent magnets in the array to cause pinning of the magnetization direction of a magnetic layer that becomes the pinned layer [e.g. claim 5].

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evan Pert whose telephone number is 703-306-5689. The examiner can normally be reached on M-F (7:30AM-3:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on 703-308-1233. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.

ETP
September 30, 2003


EVAN PERT
PRIMARY EXAMINER